

Goal 2

A major comprehensive research institution ranked nationally in top twenty public universities in the University of Kentucky

To compete with the nation's top comprehensive research institutions, the University of Kentucky must enroll and graduate more students and increase its research productivity. The following summarizes UK's performance on the Council key indicators in 2002-03. Goals for these indicators were established by the Council in consultation with the institution. This section also includes information on Lexington Community College.

CPE Key Indicators of Progress

UK met its performance goals for:

- Undergraduate enrollment, which increased from 17,284 in 2001 to 17,878 in 2002.
- Graduate and first-professional enrollment, which increased from 6,764 in 2001 to 7,155 in 2002.
- The systemwide retention rate of first-time freshmen, which increased from 86.1 percent in 2001 to 88.2 percent in 2002.
- The number of community and technical college transfers to UK, which remained above the 2002 goal despite decreasing from 704 in 2001 to 700 in 2002.
- The six-year graduation rate of bachelor's degree students, which increased from 57.2 percent in 2001 to 57.8 percent in 2002.

The five-year graduation rate of transfer students (three-year average), which increased from 51.6 percent in 2001 to 53.5 percent in 2002.

According to the Council's 2001 Undergraduate Alumni Survey:

- 80 percent of UK's undergraduate alumni were satisfied with instruction and faculty.
- 63 percent were satisfied with academic and student services.
- 71 percent were satisfied with their preparation for work.
- 67 percent "definitely would recommend" UK to a friend.
- An average of 52 percent regularly participate in volunteer, charitable, or civic activities.

According to the 2001 National Survey of Student Engagement (which assesses undergraduate student experience):

- First-year students scored UK higher than predicted on three of five benchmarks—"level of academic challenge," "active and collaborative learning," and "student interactions with faculty members"—and lower than predicted on "supportive campus environment" and "enriching educational experiences."
- Seniors scored UK higher than predicted on one of five benchmarks, "student interactions with faculty members," and lower than predicted on the remaining four.
- 16 percent of first-year students and 33 percent of seniors participated in a community-based project as part of a regular course.
- 48 percent of both first-year and senior students reported participating in volunteer work outside of class.
- 20 percent of first-year students and 33 percent of seniors reported that their college experience contributed to their knowledge, skills, and personal development in contributing to the welfare of the community.
- 18 percent of first-year and 22 percent of senior students reported that their experiences at UK contributed to the development of their voting behavior.

In the area of research and development:

- Extramural research and development expenditures rose from \$143 million in 2000 to \$151 million in 2001 (National Science Foundation data). UK's goal for 2002 is \$158 million. Preliminary data reported by UK to NSF indicates UK's 2002 total was \$162 million.
- Federal research and development expenditures rose from \$74 million in 2000 to \$86 million in 2001 (National Science Foundation data). UK's goal for 2002 is \$87 million. Preliminary data reported by UK to NSF indicates UK's 2002 total was \$100 million.

For the purposes of the *Kentucky Plan for Equal Opportunities*:

- In 2001-02, UK showed continuous progress in six of eight objectives, qualifying for automatic eligibility status (i.e., UK was automatically eligible to add new degree programs in 2003). Performance for 2002-03 will not be available until January 2004.

Lexington Community College

LCC met its performance goals for:

- Undergraduate enrollment, which increased from 7,793 in 2001 to 8,270 in 2002.
- The number of students who transferred to a Kentucky four-year institution from LCC, which increased from 587 in 2001 to 658 in 2002.

LCC did not meet its performance goal for:

- The retention rate of first-time freshmen, which decreased from 65.6 percent in 2001 to 63.2 percent in 2002.

According to the Council's 2001 Undergraduate Alumni Survey:

- 80 percent of LCC alumni were satisfied with instruction and faculty.
- 73 percent were satisfied with academic and student services.
- 71 percent were satisfied with their preparation for work.

- 74 percent of alumni surveyed “definitely would recommend” LCC to a friend.
- 48 percent of LCC alumni regularly participate in volunteer, charitable, or civic activities.

For the purposes of the *Kentucky Plan for Equal Opportunities*:

- In 2001-02, LCC showed continuous progress on three of four objectives, qualifying for automatic eligibility status (i.e., LCC was automatically eligible to add new degree programs in 2003). Performance for 2002-03 will not be available until January 2004.

In 2001-02, President Lee T. Todd, Jr. appointed the Top-20 Task Force to identify the characteristics of a top-ranked public research institution and the indicators by which those characteristics could be measured. The work of the Task Force culminated in six essential characteristics, which formed the basis for a new strategic plan approved by the Board of Trustees in June 2003—The Dream & the Challenge.

Progress Toward National Prominence

UK uses several additional internal indicators and rankings that reflect progress toward becoming a top-twenty, public research university. In 2001-02, President Lee T. Todd, Jr. appointed the Top-20 Task Force to identify the characteristics of a top-ranked public research institution and the indicators by which those characteristics could be measured. The work of the task force culminated in six essential characteristics, which formed the basis for a new strategic plan approved by the board of trustees in June 2003—*The Dream & the Challenge*. Six major goals align with the characteristics essential to success:

1. Reach for national prominence
2. Attract and graduate outstanding students
3. Attract, develop and retain a distinguished faculty
4. Discover, share and apply new knowledge
5. Nurture diversity of thought, culture, gender and ethnicity
6. Elevate the quality of life for Kentuckians

Performance measures have been established to assess UK’s progress toward each of these six goals. Several measures represent information that has been used since HB 1 passed in 1997; moreover, these measures figure prominently in national rankings published by *TheCenter* and the National Science Foundation (NSF).

TheCenter Rankings

TheCenter is a research enterprise established by the University of Florida to assess and guide the improvement of university performance. In its annual report, the top American research universities are ranked across nine standard measures.

Although the 2003 report by *TheCenter* is not yet available, the table below depicts the rankings for the last three reports, covering the time period of 1998-2001. UK has made good, consistent progress in total and federal research expenditures, endowment assets, and post-doctoral appointees. Rankings for faculty awards, doctorates awarded, SAT scores, and national academy members have declined slightly since 2000. UK was ranked in the top 35 public institutions on three measures, and in the top 50 public institutions on seven of the nine measures.

University of Kentucky Ranking Among Public Institutions as Reported by *TheCenter* by Year and Measure

Report Year	Total Research	Federal Research	Endowment Assets	Nat'l Annual Giving	Academy Members	Faculty Awards	Doctorates Awarded	Post-doctoral Appointees	SAT Scores
2000	30	47	38	39	56	30	47	38	72
2001	30	47	39	51	58	29	40	41	75
2002	26	46	32	45	57	37	49	34	73

Shows gains in ranking from 2001-2002

Shows losses in ranking from 2001-2002

Note: A smaller number indicates a higher ranking.

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NSF Research and Development Expenditures Survey

To fulfill its research mission, UK is focusing resources on building a distinguished research faculty and recruiting high-quality graduate students. Over the past few years, UK has made significant progress in research productivity. According to NSF, total research and development expenditures in science and engineering fields at UK increased from \$161,346,000 in 1998 to \$211,721,000 in 2001, a 31 percent increase. With this increase, UK was ranked 36th among public institutions in total research and development expenditures, compared to a ranking of 46th in 1996-97, before the passage of HB 1.

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Other State and National Accomplishments

These accomplishments further document UK's growing national reputation:

- UK was named a 2002 Harry S. Truman Scholarship Honor Institution, a prestigious national recognition for exemplary participation in the Truman Scholarship program. UK was selected for its active encouragement of outstanding young people to pursue careers in public service, its effective promotion of the Truman program on campus, and its sustained success in helping students win Truman Scholarships.
- In 2002-03, UK ranked among the top 15 public institutions in the number of National Merit Scholars enrolled in the first-year class.
- In 2001-02, UK was selected as one of only five comprehensive research universities in the nation entitled to award Beckman Foundation undergraduate research scholarships—totaling \$105,000 over the next three years—to six students. These students will conduct undergraduate research work in chemistry, biochemistry, and biological and medical sciences, with top UK faculty members in each of these disciplines serving as mentors.

Since the 1997-98 baseline year, sponsored project awards in the 11 RCTF programs at UK have grown from a total of \$38.6 million to \$76.9 million, representing a 98.9 percent increase and a significant return on the initial \$8 million investment in these programs.

Research Challenge Trust Fund Programs

HB 1 created the Research Challenge Trust Fund to support nationally recognized research programs at UK and UofL. Sponsored research awards in 11 RCTF-supported programs at UK have grown from a total of \$38.6 million in 1997 to \$76.9 million in 2003, representing a 98.9 percent increase and a significant return on the initial \$8 million investment in these programs (\$4 million RCTF and \$4 million institutional match). A comprehensive, annual report on UK's RCTF programs for 2002-03 is available at the Council. Highlights of the report include:

Multidisciplinary Excellence in Gerontology and Aging

The mission of this program is to become the nation's leading center for the integration of gerontological studies and multidisciplinary research on aging. This graduate program trains students to become gerontologists with a strong background

in specialized topics such as neurodegenerative disease, rural aging, and various health sciences. In 2002-03:

- Sponsored research awards totaled \$7.4 million, up from \$5.8 million in 1997-98.
- Eleven manuscripts were accepted for publication.
- The program completed co-sponsored research with the Kentucky Long-Term Policy Research Center and the University of Kentucky Survey Research Center to assess Kentuckians' preparation for retirement.

College of Medicine Tier 1 Departments

This program's objective is to develop integrated foci in the basic medical sciences involving aging and neuroscience and genetics and molecular biology in the Departments of Anatomy and Neurobiology, Biochemistry, Microbiology and Immunology, and Physiology. In 2002-03:

- Sponsored research awards totaled \$24.3 million, up from \$15.5 million in 1997-98.
- Two hundred twenty-five manuscripts were accepted for publication.
- Faculty were involved in a Food and Drug Administration Phase II/III trial assessing the use of GDNF for treatment of Parkinson's Disease.

Clinical Pharmaceutical Sciences Research and Graduate Training

This program prepares new health care professionals to become leading scholars in the evaluation of contemporary drug therapies and aims to be one of the nation's best centers for doctoral training in clinical pharmaceutical sciences. In 2002-03:

- Sponsored research awards totaled \$13.9 million, up from \$4.2 million in 1997-98.
- Eight manuscripts by graduate students and 37 by RCTF faculty were accepted for publication.

- College of Pharmacy faculty participated as co-investigators with other university researchers in the Colleges of Medicine, Engineering, Arts and Sciences, and Agriculture on grants totaling \$17.9 million.

Molecular Mechanisms of Toxicity

By enhancing its expertise in two major research areas—chemical carcinogenesis and neurotoxicology—this program aspires to be one of the top-20 toxicology programs in the nation. In 2002-03:

- Sponsored research awards totaled \$4.2 million, up from \$1.7 million in 1997-98.
- Thirty-four manuscripts were accepted for publication.
- The graduate program maintained the externally funded institutional National Research Service Award (NIEHS Training Grant).

Excellence in Computer Science and Electrical Engineering

The mission of this program is to build premier research and graduate training programs in computer science and electrical engineering. The former concentrates on the selected specializations of distributed computing and networking systems and their applications; the latter focuses on the specializations of electromagnetics and microelectronics. In 2002-03:

- Sponsored research awards totaled \$4.8 million, up from \$2.5 million in 1997-98.
- Forty-two manuscripts were accepted for publication.
- Major collaborations included Lexmark Inc., Cypress Semiconductors, Lixel Inc., and the Kentucky Science and Engineering Foundation.

Graduate Programs in the Department of Chemical and Materials Engineering and the Department of Physics and Astronomy

These programs support new faculty and graduate students who contribute to fundamental research in new materials and to applied research. Additionally, they aim to develop the expertise in materials sciences necessary to sustain an interdisciplinary program across experimental condensed matter physics (Department of Physics and Astronomy) and the Department of Chemical and Materials Engineering. In

2002-03:

- Sponsored research awards totaled \$4.8 million, up from \$2 million in 1997-98.
- Thirty-five manuscripts were accepted for publication.
- The faculty has a grant/loan from the Kentucky Science and Technology Corporation to develop superconducting levitation mixers for biopharmaceutical applications, and a subcontract from LevTech, Inc. to develop a novel bioreactor design using superconducting levitation.

Plant Sciences: Research, Grant Education, and Technology Transfer for Kentucky's Future

The objective of this program is to achieve international distinction for research and graduate education in a broad array of plant sciences. This initiative integrates strengths in several graduate concentrations, including crop science, plant pathology, plant physiology/molecular biology, plant science, soil science, horticulture, landscape architecture, and forestry. In 2002-03:

- Sponsored research awards totaled \$8.1 million, up from \$2.9 million in 1997-98.
- There were 70 active grants or contacts, up from 43 in 1997-98.

Interdisciplinary Focus in Biological Chemistry

The goal of the program is to build a nationally prominent specialization in biological chemistry, with particular expertise in bio-organic, bio-inorganic, and biotechnology applications. In 2002-03:

- Sponsored research awards totaled \$3.9 million, up from \$1.2 million in 1997-98.
- There were 49 active grants and contracts.

Graduate Programs in Economics and Business Administration

These programs enhance the graduate and professional programs in business administration and economics by strengthening faculty expertise in the areas of macroeconomics and the management of financial institutions. In 2002-03:

- Sponsored research awards totaled \$3 million, up from \$1.9 million in 1997-98.
- One hundred forty-eight manuscripts were accepted for publication.
- Thirty faculty members were involved in collaborative research and community outreach.

Psychology of Substance Abuse and Prevention

The development and application of effective prevention strategies in areas such as substance abuse has strengthened the Psychology Department, which hopes to rank among the top 25 percent of psychology departments at public institutions. In 2002-03:

- Sponsored research awards totaled \$2.1 million, up from \$700,000 in 1997-98.
- One hundred eleven manuscripts were accepted for publication.

Expanding the Frontiers of Geography (Social Theory)

The graduate program in geography aims to be one of the ten best programs in the nation, in part by adding faculty strengths in social theory and human geography. In 2002-03:

- Sponsored research awards totaled \$194,000, up from \$163,000 in 1997-98.
- Fifty-two manuscripts were accepted for publication.
- Major collaborations included the Kentucky Water Resources Research Institute, the Blue Grass Trust Community Planning Committee, Dry Stone Conservancy, the Woodford County Comprehensive Plan Update Task Force, and the Legislative Research Commission's Task Force on Community Services for Older People.

Graduate Student Support Initiative

To increase UK's ability to recruit the nation's most outstanding graduate students to its leading doctoral programs, this project will provide new graduate and assistant fellowship support packages for graduate students in programs currently judged to be the university's targets of opportunity. In 2002-03:

- Five hundred eighty graduate student publications appeared in refereed journals, up from 511 in 1997-98.
- There were 1,299 graduate student presentations at professional meetings, up from 747 in 1997-98.
- A total of \$764,000 was awarded in Kentucky Opportunity Fellowships.

Major Initiatives for 2003-04

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Strategic Plan Implementation

All units are now engaged in revising existing plans, or developing new ones, to align with the goals, objectives, and key indicators of *The Dream & the Challenge*. Efforts also are underway to identify the amount and source of funding necessary to achieve the mission, vision, and goals set forth in the plan.

Several major initiatives related to the new strategic plan are already being implemented. The new strategic plan has identified 14 priority areas for future development. These areas will help UK build upon or attain national recognition or advance the land-grant mission. In response, the Office of the Provost implemented the *Provost Incentive Program (PIP) for Targeted Faculty Hires* in 2003-04. Through internal reallocations of approximately \$2 million, 22 new faculty positions to support advancement in the priority areas have been filled, or are in the process of being filled:

- Behavioral health-risk research and training team (3)
- Interdepartmental program in race, ethnicity and civic identities of the Americas (3)
- Organic chemistry (1)
- Biology faculty development of genomics (1)
- Plant bioengineering (4)
- School of music (1)
- Neuroscience and AIDS (1)
- Translational molecular neurobiology (1)
- Secretases and Alzheimer's disease (1)
- Pathogenesis of selected agents (1)
- Lipid-mediated DNA damage (1)
- Oxidative stress (1)
- Cardiovascular research and training (1)
- Pharmacogenomics (1)
- Epidemiology (1)

UK's new strategic plan identified 14 priority areas for future development. These areas will help UK build upon or attain national recognition or advance the land-grant mission and improve the lives of all Kentuckians.

A *Committee on Academic Priorities*, comprised of faculty representatives throughout the university, was established in summer 2003. The purpose of the committee is threefold: 1) to evaluate progress made with the futures investments, 2) to consider new opportunities that the faculty regard as priorities, and 3) to pursue a course that will continue to move UK toward national prominence. The evaluation and consideration of potential research priorities, as conducted by the Futures Task Force, will become an ongoing activity designed to ensure that UK remains on the path toward national prominence.

Improvement Initiatives in Key Areas

Consistent with the Council on Postsecondary Education's Action Agenda, UK's primary emphases have been to improve the quality and success of undergraduates, improve research productivity, improve outreach and economic development throughout the Commonwealth, and increase available resources by growing the university's endowment with the help of Bucks for Brains. The following initiatives address areas where continued progress is essential or where progress has been limited or inconsistent:

To increase transfer enrollment and credit hours transferred, UK and LCC will:

- Concentrate on new efforts to recruit and enroll more transfer students. Specifically, an associate director of undergraduate admission now has direct responsibility for coordinating transfer recruitment at LCC and KCTCS institutions.
- Conduct more on-site visits to all KCTCS institutions to enhance the matriculation process of transfer students.
- Focus efforts on increasing transfer enrollment from LCC to four-year institutions. LCC will continue to pursue a Title III grant to fund a transfer center, where staff can assist students in reviewing their transfer options.
- Implement CAS, the Course Applicability System, which will make it easier for staff to assess the progress students have made toward an associate degree prior to transferring.

To increase retention rates, UK will:

- Fully implement the First-Year Experience Program to enrich students' freshman year, including the expansion of UK101-Orientation to UK, Discovery Seminars, the Academic Recovery Program, and new living-learning communities. In 2002-03, a faculty member in the Department of Educational Policy and Evaluation, with research expertise in college student success, was appointed first-year coordinator to integrate and oversee the various first-year initiatives. UK's goal is for every entering

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Based on survey findings, UK is engaged in efforts to develop an "early-warning system" that will help advisers identify students who are academically at-risk. Survey results also will be used to evaluate the ongoing effectiveness of several programs that serve first-year students.

first-year student to participate in at least one activity designed to help establish connections with the university, integrate their academic and social lives, and improve retention and student success.

- Use results from the first-year survey to improve first-year enrichment courses. During the first week of the fall semester, first-year students complete a questionnaire asking them to report on their academic and social experiences in high school and their expectations for the first year of college. A follow-up survey administered midway through the following spring semester provides an opportunity to assess changes in attitudes, expectations, and self-reported behaviors. Based on survey findings, UK is engaged in efforts to develop an "early-warning system" that will help advisers identify students who are academically at-risk. Survey results also will be used to evaluate the ongoing effectiveness of several programs that serve first-year students.
- Promote the Academic Recovery Program to students placed on academic probation at the end of the fall semester. The course curriculum is structured around theories of personal development and educational success and is designed to improve engagement and academic commitment. In the first two years of operation, the retention rate for students on probation who completed the Academic Recovery Program was 78 percent, compared to 37 percent for students on probation who did not.

To increase degree completions, UK will:

- Develop a new scholarship enhancement program that uses matching funds provided by UK athletics and other sources to leverage private donations to increase the number and amount of undergraduate scholarships.
- Develop a pilot project for a four-year graduation contract, which will ensure that a student can graduate in four years if certain conditions are met. Initially, the Contract program will be piloted with at least one program in each college.

To increase total research and development expenditures, UK will:

- Attract and retain distinguished faculty.
- Provide sufficient research space and equipment. A new biological/biomedical sciences research building is scheduled to come online in October 2004.
- Facilitate faculty success in identifying and pursuing significant funding opportunities. With the reorganization to the provost model, research support efforts have been integrated and redesigned to include: 1) a \$1 million Major Research Equipment Grant program; 2) a Research Support Grant program to enhance the competitiveness of extramural research grant applications; and 3) a Research Activity Award program to stimulate new research and support existing research and scholarly activities.
- The Provost Incentive Funding Program, implemented in 2001-02, will continue to provide rewards to colleges that establish and meet research-related goals, such as increasing the number of grant and contract proposals submitted each year.

Finally, one of UK's most pressing needs is new funding. The university has announced the extension of the current capital campaign to \$1 billion. This extended campaign will continue to build UK's endowment in areas critical to Kentucky's well being and progress.

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